Feral horses at Cape Lookout National Seashore *are managed under a congressionally legislated partnership between the National Park Service and the Foundation for Shackleford Horses, Inc. Begun in 1999, the partnership is working well and has the goal of maintaining the herd size in the range of 100–110 animals.*

With about 270 units in the national park system featuring significant natural resources, the National Park Service faces an awesome, complex, and critical stewardship task. Preserving these resources and their associated values requires many things: knowledge of the resources and understanding of the natural functions that are crucial to preservation; setting priorities for action; applying technical expertise to solve problems; and basing management decisions on scientific information. However, just as discrete biological and geophysical resources interact with one another in park ecosystems, the Park Service does not act in isolation to protect them. As the following stories remind us, natural resource protection is a public responsibility and process. The Park Service is accountable for planning, environmental evaluation, and public involvement required by environmental protection legislation, and must improve in this area. It must also be prepared, when necessary, to meet legal challenges with persuasive and scientifically defensible arguments in court. When circumstances for desired outcomes are not in its control, the Park Service must be principled, assertive, influential, sometimes persistent, sometimes patient. Additionally, it needs to continually improve its collaboration with partners for the benefit of resource preservation. The following articles illustrate some of these challenging areas of natural resource protection.

Legislated Resolution of a Resource Management Issue

Feral horses at Cape Lookout National Seashore

by Sue Stuska, Ed.D.

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Partnerships with citizen groups to manage park natural resources are nothing new. Such public partnerships are extremely beneficial in that they pool resources and enable more progress than either the National Park Service or an independent organization could achieve on its own. In 1999, however, Congress mandated a partnership for the management of feral horses on Shackleford Banks at Cape Lookout National Seashore, North Carolina (P.L. 105-202 and 105-229). Legislated resolution to management issues is uncommon, and it is perhaps not the preferred method of coming to agreement on a partnership. The Cape Lookout legislation came about when the public felt the park was not addressing their concerns and input regarding management of the horses. Perhaps an agreement could have been reached without legislation, perhaps not. What is important is that now a partnership is in place, and it is working well to everyone's advantage.

The legislation specified a partnership with "the Foundation for Shackleford Horses, Inc., … or another qualified nonprofit entity." This foundation, a private, local, nonprofit organization, is Cape Lookout's partner in management of the horses. A memorandum of understanding (MOU), a common and valuable document for partnerships, is now in place, and a jointly drafted Horse Management Plan has been implemented. The legislation, the MOU, the Horse Management Plan, and the partnership now structure the day-to-day and long-term management of the horses.

> "Legislated management can create other challenges by restricting the ability to adapt … to future unknowns."

One difficulty with legislated partnerships is that the battle surrounding the creation of legislation can engender negativity between the parties. This complicates management issues, and negative feelings can persist even after the legislation is in place. Strained community relations can occur when one group is chosen as a partner to the exclusion of others, and science can even be overridden during decision making. Additionally, legislated management can create other challenges by restricting the ability to adapt management to future unknowns.

For example, the Shackleford Banks legislation specifies a minimum of 100 horses with a target population range of 100–110 animals. This range provides a clear and appropriate

goal to work toward at this time. The legislation also specifies that the natural resources on Shackleford Banks must not be adversely impacted by the horses. Presently, the 9-mile-long, 1/2- to 1-mile-wide barrier island supports a herd of this size on existing vegetation. However, the dynamic nature of barrier islands is likely to result in changes in the availability of vegetation in the future, suggesting the need to adapt the target size of the herd.

Although this partnership is working remarkably well at Cape Lookout, parks faced with similar issues might reflect on the processes that brought it about. The following steps will help provide a solid basis for making management decisions. Parks should: (1) identify early those issues that are likely to create intense interest by the public; (2) obtain timely scientific information from peer-reviewed literature and incorporate it into park planning and National Environmental Policy Act documents; (3) include expert opinion and available information from works in progress, particularly when rapid changes to resources are likely; (4) seek review (possibly including independent peer review) to validate the interpretation and application of the scientific information; (5) strive to reach agreement and consider using a third-party mediator if needed; and (6) work proactively with the public to involve them and include their input. The goal is to benefit the resource, which ultimately benefits everyone.

Parks exceed ozone standard in 1999

Five parks comprise the list of worst ozone-polluted units in the national park system in 1999, according to data from the NPS Air Resources Division. During the year, Sequoia–Kings Canyon National Park (California) logged 64 days on which it exceeded the level of the National Ambient Air Quality Standard for ozone. Next was Great Smoky Mountains National Park (North Carolina and Tennessee), followed by Joshua Tree National Park (California). Mammoth Cave (Kentucky) and Shenandoah National Parks (Virginia) were fourth and fifth on the list, respectively. To exceed the national standard, a park must log an eight-hour period in which the average ozone concentrations exceed 85 parts per billion. In the case of Sequoia, the fourth-highest daily maximum eight-hour average for ozone (the statistical benchmark for determining compliance with the standard) was 108 parts per billion in 1999. Ozone is a secondary air pollutant that results from chemical reactions of emissions of nitrogen oxides and volatile organic compounds in sunlight. It can cause human health problems and damage park vegetation.

Environmental Compliance

Lessons from NEPA lawsuits

by Jake Hoogland

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The National Park Service was the defendant in several lawsuits in 1999 stemming from violations of the National Environmental Policy Act. Known as NEPA, the act directs federal agencies to follow a systematic and scientific approach to assessing environmental impacts when proposing actions that may adversely affect the environment.

In the case of *Sierra Club v. Slater et al.,* the National Park Service proposed to construct new lodging in Yosemite National Park, California. A 1997 flood had damaged lodging near the Merced River in Yosemite Valley, and the park proposed to remove the damaged structures and replace them with new construction outside of the 100-year floodplain. The park issued an environmental assessment (EA) that dismissed the possibility of relocating the facilities outside the park because the project would not conform to park planning documents that had already been adopted. Later, the park released a finding of no significant impact (FONSI) regarding the proposed construction. The federal court ruled that earlier environmental impact statements (EIS) did not "relieve the NPS of its obligation to conduct an EIS…, because the cumulative environmental concerns raised by the lodge plan … [were] not … previously addressed…. The Park Service failed to acknowledge that … damage caused by the 1997 flood gave rise to new circumstances not contemplated by the prior planning documents." From this experience the Park Service learned that generalized planning documents may not provide the specific and detailed environmental analysis needed for many proposed actions. Additionally, cumulative effects arising from multiple planning projects need to be addressed comprehensively. Finally, conditions that have changed since earlier planning documents were written may require a fresh look at alternatives.

A second case revolved around the proposal to construct a parking lot on the Going-to-the-Sun Road in Glacier National Park, Montana *(Coalition for Canyon Preservation v. Babbitt et al.)*. Proposed to reduce pedestrian traffic across the road, construction of the parking lot would require removing a portion of a rare and vulnerable forest. The park prepared an EA and later issued a FONSI, although the FONSI implied the need for an EIS to consider the project's impact on an extremely significant resource: the cedar–devil's club forest. In this case, decision makers ignored repeated warnings in the administrative record that tree removal and other impacts were significant. This reinforces for the National Park Service that if an environmental assessment indicates that impacts may be significant, then an EIS must be prepared. In addition, decisions must be based on reasonable information, well documented, and fully disclosed. As the court noted, "In ignoring the repeated references in the administrative record about the significance of the proposal's impacts, the National Park Service's decision not to perform an EIS is arbitrary and capricious." Finally, proposed mitigation measures must not be speculative, but rather must be based on scientific and technical analysis and present a realistic opportunity for success in the foreseeable future.

These judgments serve as reminders of the importance of environmental compliance and the use of scientific information in arriving at preferred alternatives for management decisions.

Achieving Results in an Out-of-Control Arena

What can the National Park Service do about air quality problems?

by Christine Shaver

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The National Park Service has been monitoring air quality in many parks for more than a decade. Under the Government Performance and Results Act, the Park Service measures the effectiveness of its air quality program based on results. It holds itself publicly accountable for preventing air quality deterioration in parks, even though it has no direct control over sources of pollution located outside park boundaries. Why? Because the public expects the Park Service to protect these special places, not just keep tabs on their condition.

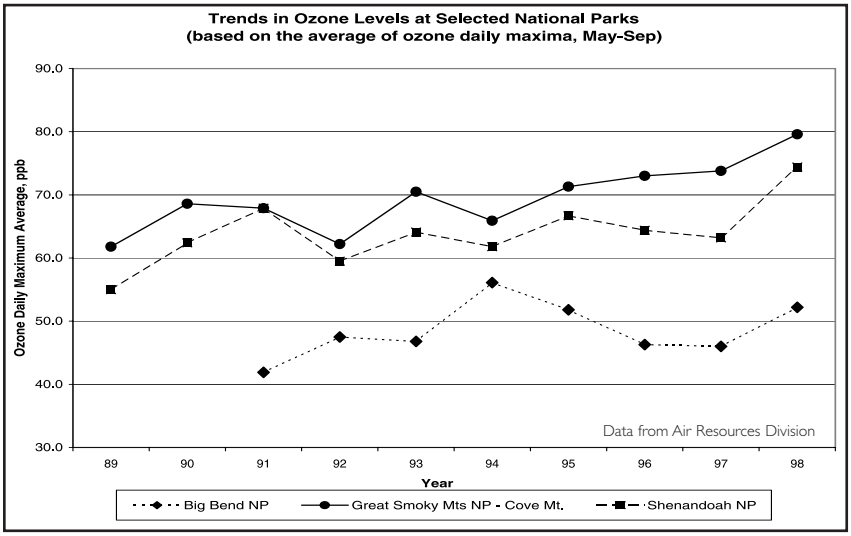
Although resource managers have used a variety of methods to detect changes in air quality, preparation of the first annual performance report in 1999 required development of a systematic, consistent, and comprehensive approach for assessing air quality trends. As a result of this detailed data analysis, park and program managers were alerted to deteriorating air quality trends in several national parks, including Shenandoah, Great Smoky Mountains, and Big Bend. When confronted with data documenting deteriorating air quality, managers are using a variety of strategies to exercise influence over air pollution sources the National Park Service cannot control. This suite of strategies includes communication, constituency building, collaboration, and, when necessary, a more direct approach.

One of the simplest, and perhaps most effective, strategies is to communicate air quality–related information to the public. Shenandoah, Great Smoky Mountains, and Big Bend have all embraced this strategy. Through a combination of wayside and visitor center exhibits, information pamphlets or site bulletins, articles in park newspapers, websites (including real-time access to air quality data being collected at Great Smoky Mountains), press releases, and other methods, these parks reach out to the public and local and national media. For example, Great Smoky Mountains has been issuing advisories to visitors and employees on days when air pollution levels are unhealthy. Shenandoah is developing a similar program.

Communication also builds constituencies that may use the information to echo and advance the objectives of the National Park Service for resource protection. The approach used in each of these parks is to find common ground and interests with local community organizations, including traditional, nongovernmental friends groups; economic and business interests; state and local government officials; schools and universities; congressional delegations; other federal land managers; and the scientific community. Effective constituency building by Great Smoky Mountains and Shenandoah led the National Parks and Conservation Association and the Izaak Walton League of America to publish reports highlighting park air quality issues and advocating for more aggressive pollution-reduction programs.

Collaboration is critical to achieving air quality-improvement objectives. At Big Bend the National Park Service worked with federal, state, private, and international officials to design and conduct an intensive monitoring program encompassing a multistate area, including the region bordering Mexico. The study was aimed at identifying sources contributing to air pollution problems at Big Bend and will provide a foundation for seeking pollution reductions needed to restore good air quality at the park. Great Smoky Mountains and Shenandoah have been participating in the Southern Appalachian Mountain Initiative, a stakeholder-based air quality planning effort in the Southeast. Following several years of data analysis, the partnership is now beginning to build consensus on what additional pollution control strategies will be needed.

When all of these strategies fail to produce results, however, the National Park Service needs to be willing to challenge actions and confront inaction head-on. Face-to-face meetings involving the NPS Director, superintendents, and state environmental directors have been convened to signal the importance of the issue. In Shenandoah's case, where a state was not responsive, appeals have been lodged with the Environmental Protection Agency (EPA). The next step is to ensure that the EPA carries out its oversight responsibility.



The graph shows a rising trend *in ozone levels at Big Bend, Great Smoky Mountains, and Shenandoah National Parks from 1989 to 1998. When confronted with data documenting deteriorating air quality, NPS managers are using a variety of strategies to exercise influence over air pollution sources the National Park Service cannot control.*

Bison management planning moves forward

In December 1999 the National Park Service, the U.S. Forest Service, and the Animal and Plant Health Inspection Service announced that discussions with the State of Montana had reached an impasse regarding a preferred alternative in the final environmental impact statement for managing bison in greater Yellowstone. The federal agencies intend to move forward with a final plan to protect Yellowstone's free-ranging bison population while maintaining Montana's brucellosis class-free status and minimizing the need for lethal control of bison. Efforts to produce a long-range plan have been under way since 1990, and a final decision is expected in fall 2000.

Bioprospecting Challenge

National Park Service prevails in court; environmental impact statement on schedule

by John D. Varley with Ann Deutch

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Bioprospecting is the search for valuable organic compounds in nature. Once discovered, these compounds are normally taken to a public or private laboratory where staff develop techniques to synthesize or produce a promising compound in larger quantities. Such discoveries are made by focused bioprospectors but are also a serendipitous result of basic research. At least 10 national parks have received proposals for scientific research projects that might lead to tangibly valuable scientific discoveries in many fields, including medicine, agriculture, energy production, and bioremediation technologies.

Like other parks, Yellowstone National Park has allowed scientists to collect small specimens of rocks, plants, and other organisms for research purposes. If the results of such research were tangibly valuable, neither Yellowstone nor the National Park Service ever received more than a pat on the back. In 1997 this situation began to be corrected. Yellowstone entered into a Cooperative Research and Development Agreement (CRADA) with Diversa Corporation to share benefits, including the licensing and sale of products developed from research involving microorganisms collected from Yellowstone's hot springs. Under this agreement, Yellowstone will receive a package of benefits, including a portion of Diversa's profits if any are derived from research involving the park's microbes.

> "Yellowstone will receive ... a portion of Diversa's profits if any are derived from research involving the park's microbes."

In 1999 the CRADA was the subject of a lawsuit in the District Court of Washington, D.C. The suit asserted that the National Park Service had failed to meet the requirements of a variety of laws when it entered into the CRADA with Diversa. In April 2000 the court ruled that Yellowstone's CRADA with Diversa is "proper" and "does not conflict with the conservation mandate." The court also emphasized congressional intent regarding these agreements involving national parks. Finding that the CRADA "plainly constitutes an 'equitable, efficient benefits sharing arrangement,'" the court went on to declare that "the far-reaching terms of the Parks Management Act reinforce the conclusion that the Yellowstone-Diversa CRADA is proper." Nonetheless, because of a preliminary judgment in 1999, the CRADA is currently suspended until the National Park Service completes an environmental analysis examining the implications of bioprospecting in the national parks.

Extremely inhospitable habitats, *such as hot springs in Yellowstone, support thriving microbial communities. The study of these microorganisms and how they function under extreme conditions can provide vital information to bioprospectors. The National Park Service is completing an environmental analysis of the implications of bioprospecting in national parks.*

Reinvigorating a Program

National Natural Landmarks Program: Up and running ... and raring to go

by Steve Gibbons

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After a 10-year hiatus in designating new sites, the National Natural Landmarks (NNL) Program is back on its feet, steady, and raring to go. As you may recall, the National Park Service placed a moratorium on the NNL Program in 1989, which postponed the nomination, evaluation, and designation of new sites for landmark status. Though not a welcome development at the time, in hindsight the moratorium provided the National Park Service with an opportunity to take stock of the program on a national scale and make some key improvements. During this period, the National Park Service was successful in garnering a congressional appropriation of $775,000 to bolster the national program, which provided funding for additional "full-time" NNL regional coordinators. Just as important, program officials had time to revise the NNL regulations, identify and contact all landmark owners, update both the national landmarks handbook and the database, and adopt management controls for the program.

The painstakingly slow and protracted 10-year moratorium officially came to a close on 12 May 1999, with the promulgation of the new NNL regulations in the *Federal Register*. The new regulations reflect a balance between the National Park Service and private landowners while providing clarity, direction, and meaning to the landmarks program. Specifically, the new regulations reinforce the truly voluntary and honorary nature of the program by granting a 90-day withdrawal period to all landmark owners. Withdrawal requests were still being processed at the end of 1999; however, early tallies indicate a large percentage coming from three problematic landmark sites across the country. These three sites each have more than 1,000 landowners and were negatively affected by local misinformation about the landmarks program. The intent of the National Natural Landmarks Program is to resume the designation process after all withdrawal requests have been processed and boundaries adjusted.

With the final passage of the new regulations and the lifting of the moratorium, a new day has begun for the NNL Program. However, the National Park Service cannot do it alone. To be a truly successful program an all-inclusive prescription is needed, forging cooperative partnerships and relationships at all levels. Success for the NNL Program must prescribe success for all stakeholders, involving private landowners, government employees, academia, county commissioners, state representatives, and the Congress at large. Director Stanton's Natural Resource Challenge affirmatively echoes this call. National Natural Landmark Program coordinators, too, are ready to make a go of it. The real question is, are you?

Located in the Deschutes National Forest in central Oregon, *Newberry Crater National Natural Landmark is a young volcano formed within the last million years of the Pleistocene Epoch. It is the largest Pleistocene volcano east of the Cascades Range and stands isolated and conspicuous on a broad plateau of lava.*